MCI Communications Corporation
1801 Pennsylvania Ave., NW
Washington, DC 20006
202 887 2048

Leonard S. Sawicki
Senior Manager
Regulatory Affairs

EX PARTE OR LATE FILED

EX PARTE

September 26, 1994

Mr. William F. Caton
Secretary
Federal Communications Commission
Room 222
1919 M Street NW
Washington, D.C. 20554

Re: CC Docket 94-1; Price Cap Performance Review for Local Exchange Carriers

Dear Mr. Caton:

Attached to this letter are copies of a recent study, Promises Versus Reality: Telecommunications Infrastructure, LEC Investment and Regulatory Reforms, by William Page Montgomery. I am today distributing copies to Fatina Franklin, Thomas Quaile and Mark Uretsky of the Common Carrier Bureau. Please include this work in the record of this proceeding.

Sincerely,

Leonard S. Sawicki

Attachment

cc: Ms. Franklin
Mr. Quaile
Mr. Uretsky

Promises Versus Reality:

Telecommunications Infrastructure, LEC Investment and Regulatory Reforms

William Page Montgomery

August, 1994

Promises Versus Reality:

Telecommunications Infrastructure, LEC Investment and Regulatory Reforms

William Page Montgomery

August, 1994

Table of Contents

Promises Versus Reality:
Telecommunications Infrastructure, LEC Investment and Regulatory Reforms

EXECUTIVE SUMMARY

For the last five years, local telephone companies have linked their requests for reduced regulation to promises that spending on the telecommunications infrastructure would increase. The pace of network modernization would accelerate, the LECs said, if they could obtain regulatory relief. Results are coming in, but the linkage promised by LECs is hard to find. The infrastructure linkage that once formed the foundation of the LECs' visions of regulatory relief is — at best — difficult to discern and — more often — nonexistent.

This report reviews and confirms the results of several recent studies which show that increasing the cash flow available to local monopoly telephone companies generally does not change their investment incentives or increase expenditures on their telephone networks. Analysts with a variety of perspectives have reached this same conclusion, as have several state reviews of alternative regulation plans. Our conclusion provides both findings and important policy lessons:

- ***Finding.*** Relaxed regulation of LECs does not lead to increased network investment. Earnings sharing and price cap plans reduce regulatory oversight of LEC earnings and cash flow, but do not realize the infrastructure benefits promised by the LECs. A few states like Tennessee and Vermont have *mandated* that LECs spend money on their networks. This approach may lead to actual spending increases but not stimulate demand. And if demand does not rise with infrastructure investment, the consequences of mandated spending plans are as bad (or even worse) than mistargeted "incentive" schemes.

- ***Policy Lesson.*** *A plan designed to stimulate infrastructure spending should have at least these four features, which most infrastructure plans lack:* The regulator ought to have a good idea (1) how the increased cash flow from higher earnings or depreciation rates will be spent; (2) how it compares to the telephone company's "business as usual" capital budgets; (3) what new or improved services and network capabilities it will produce; and (4) whether ratepayer demand will validate the infrastructure additions by using the new capabilities. Without clear targets and

ways to measure whether the targets are achieved, neither regulators nor ratepayers really know when they have arrived.

- ***Finding.*** Regulation is only one of many economic factors that affect investment decisions. As telecommunications competition increases, LEC investment strategies will be affected by many factors outside the control of the regulator. Demand for LEC services will become less certain and more elastic than it has been in the past.

- ***Policy Lesson.*** *Because of the influences of emerging competition on LEC investment strategies*, any effort to stimulate network investment by adopting a particular *form* of "alternative" regulation will be even less likely to succeed. The set of regulatory incentives sufficient to overcome all non-regulatory investment consideration would have to be so strong that both efficiency and consumer protection goals would have to be abandoned. A classical Averch-Johnson effect, often postulated to exist under *traditional* rate of return regulation, would have to be explicitly *designed into* the regulatory plan — not eliminated from it.

- ***Finding.*** Regulatory-approved increases in cash flow that are not reinvested in the telephone network when they occur are gone for good. The cash flow is directed to the LECs' other investment opportunities. Past regulatory increases in LECs' cash flow are not self-perpetuating, so an "infrastructure stimulus" vision may continue to be used by telephone companies in the future to gain rate increases and regulatory concessions, even if that vision has failed in the past to stimulate modernization of the local exchange infrastructure.

- ***Policy Lesson.*** Regulation of dominant telephone companies should adhere to its consumer protection role — to protect users of monopoly services from specific types of monopoly behavior — and not seek to become an engine of economic development. A strong, consumer-oriented incentive plan will provide LECs with the correct balance to achieve monetary rewards through investments that satisfy real market demand for telecommunications services.

The LECs have aggressively promoted the "infrastructure-for-deregulation" strategy to regulators, state legislatures and many state task forces. The basic LEC linkage of infrastructure spending, economic development and regulatory relief was appealing on its face, and many states began to focus on infrastructure spending. Examining the effects on investment several years *after* the regulatory plans were adopted leads to the conclusion

that *no particular form of regulatory relief has produced positive benefits in the form of LEC spending on the telecommunications infrastructure*.

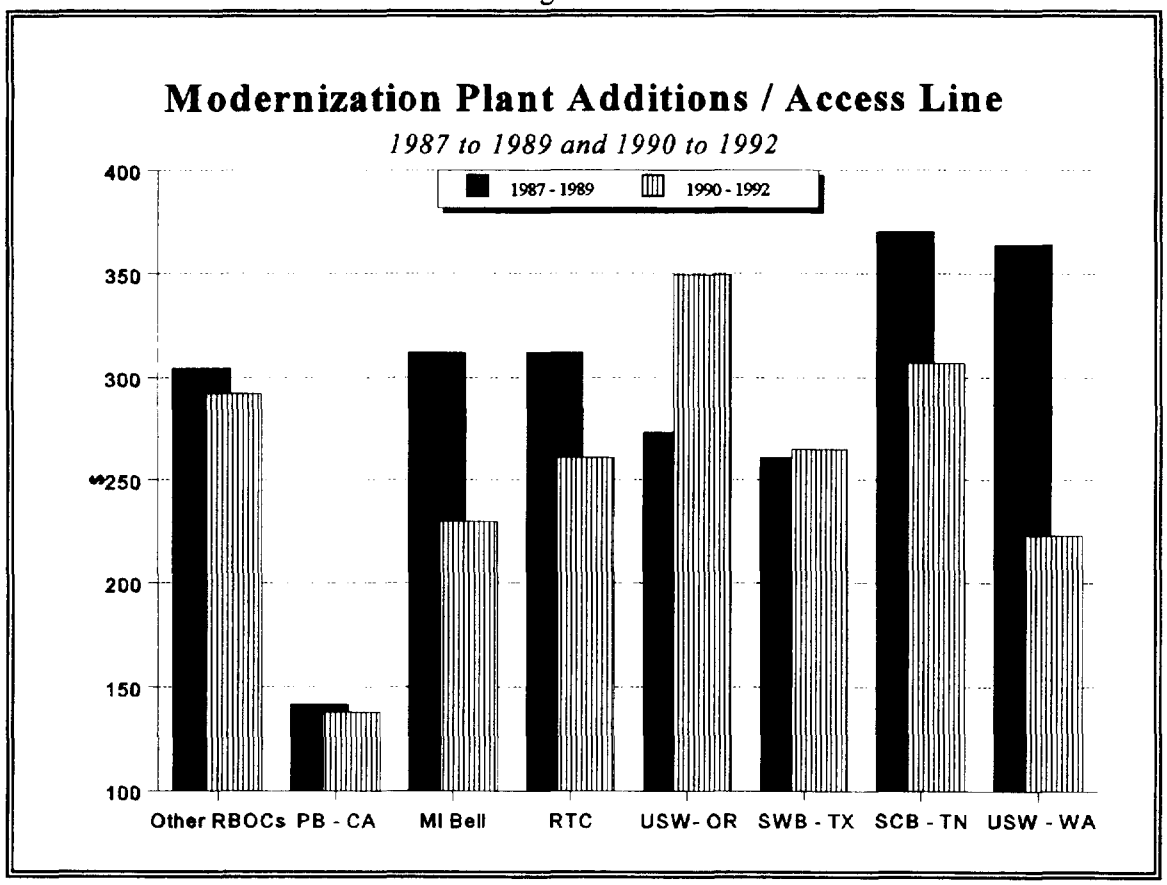
Some of the earliest state infrastructure initiatives mandated specific spending levels by LECs. These mandated spending plans fail with respect to the need to tie spending to real consumer demand. The result has been that mandated spending plans represent the largest possible departures from the traditional consumer protection objectives of telephone company regulation.

But other forms of incentive regulation also seem to have problems as serious as the ones created by mandated spending plans. Every state-sponsored report that we examined concluded that the alternative regulation scheme chosen in the state failed to achieve greater investment. Additionally, several analyses have been made using multi-state, multi-LEC data empirically examining factors that influence LEC investments in the regulated networks, as well as whether the form of telecommunications regulation has a significant effect on the *quantity* or *types* of infrastructure investment across different states or telephone companies. These studies all show that there is no linkage.

We examined independently whether specific regulatory "reform" plans in several states had any effect upon the modernization-related investment levels. Our study compared levels of gross plant investment and access line growth between 1986 and 1992 for LECs in states with incentive regulation plans to the total gross plant additions for Regional Bell Companies outside the study group. We adjusted the gross plant additions per access line to separate LECs' expenditures for access line growth from the share of investments for network modernization. Each LEC's investment net of the cost assigned to access line growth is considered to be investment in modernizing the network.

The 1990-92 period probably represents the most consistent set of incentive regulation types at both state and federal jurisdictional levels. The results for the sample of specific states show that gross plant additions per access line during 1990-92 were actually lower on average in states with alternative regulation than in the remainder of the states served by the Bell Companies. Among the seven states we examined, only Oregon realized markedly higher plant investment levels after 1989. Four states had significantly *lower* modernization expenditures during the period of so-called "incentive" regulation, and two showed virtually no change.

Figure ES-1



Other statistical analyses of LEC investment trends also support our findings, as well as the results of *ex post* reviews of state infrastructure plans. *The consensus among these studies indicates that to date incentive regulation schemes have not stimulated infrastructure investment by LECs.*

Another question is, "Can regulation *ever* be designed to create this linkage?" The answer is "No." Regulation remains necessary from the standpoint of consumer protection — i.e., to protect users of monopoly services from well-defined abuses. But regulation is only one of many economic factors that affect investment decisions for telephone companies. Neither regulators nor others who want to promote the information superhighway sit on the boards of directors of the LECs. They cannot ensure that additional funds made available through any regulatory plan that stimulates the cash flow from regulated services will, in fact, be directed back to the infrastructure.

In order to overcome the many factors *outside the control of regulators* that influence

investment decisions, any infrastructure stimulus would have to be so strong that it could distort other goals — including the control of monopoly rates. The only regulatory regime with incentives specific enough to lead to guaranteed increased investment would have two features: First, it would have to allow an earnings level somewhat higher than the market cost of capital, in order to induce telephone companies to increase capital funding for regulated services compared to other investment opportunities. Second, the regulation would have to guarantee a revenue stream to pay for the added investments — including increases in prices for basic monopoly services, even if charging those services for revenue deficiencies involved an explicit cross subsidy.

In other words, this regime would have to meet the specifications and induce the precise behavior of the Averch-Johnson effect, for a rate base / rate of return regulated public utility. The regulator's willingness to offer a rate base-type regulatory "guarantee" that earnings levels will be sustained would be a decisive factor in making LECs adhere to their infrastructure promises. This regulatory regime might have to mandate specific investment levels by the LEC, but would, in turn, require controls to prevent the LEC from targeting the investment strategically to raise the costs of entry into the LEC's core market or expedite its own entry into new markets. All of this would fly in the face of efficiency incentives.

The various regulatory infrastructure initiatives are transitory and counterproductive by nature. Regulatory plans that boosted LEC cash flow in the late 1980s and early 1990s can *never* have a positive *future* effect on LEC network spending levels if that cash flow already has been spent on other ventures. Because LEC plant is being depreciated faster than new plant is added, the nominal cash flow from regulated services must eventually decline.

In the 1987 to 1989 period, when regulators were first being importuned to adopt incentive regulation plans, the overall net outflow from Bell regulated operations to non regulated operations amounted to some $1.733-billion. During the more recent incentive regulation period, 1990 to 1992, the net outflow more than doubled to $3.579-billion. Once this money has gone into non-regulated businesses it is *gone for good*, because the LECs' ability to continuously generate high cash flow from regulated operations is not self-sustaining. Overall, faster depreciation schedules, coupled with the LECs' generally low levels of new investment, result in declining plant per access line.

LECs must continue to try to sustain the idea of a linkage between regulatory relief and infrastructure investment, regardless of the facts. Thus, regulators may soon be faced with

new claims by the telephone companies that their new investment in the network will be jeopardized unless still higher earnings or depreciation expense accruals are authorized.

In the future, however, misguided efforts to attempt to fund LEC investment in advanced telecommunications services on the backs of basic ratepayers would seriously undercut established policy goals. Valid goals like having efficient, lower rates for basic telephone services, protecting consumers, and ensuring fair market competition for advanced telecommunications services would be sacrificed. The potential suppliers of such advanced services who might be best able to offer them cost effectively would be disadvantaged, and market forces thwarted. Outcomes like these underscore a central point: Regulatory incentive plans should have both clearly-defined objectives from the outset and well-defined means for measuring whether those objectives are achieved.

Promises Versus Reality:
Telecommunications Infrastructure, LEC Investment and Regulatory Reform

William Page Montgomery*

Introduction

For the last five years, local telephone companies have linked their requests for reduced regulation to promises that spending on the telecommunications infrastructure would increase, and the pace of network modernization would accelerate — if only they could obtain regulatory relief. Results are coming in, but the linkage promised by LECs is hard to find.

The old Zen saying holds "If you don't know where you're going, any road will get you there." This, of course, begs the question "But how will you know when you've arrived?" And so it is with the telecommunications infrastructure debate. Regulators are confronted with complex and demanding tasks, so it should be no surprise that many government agencies endorsed this infrastructure linkage. At first blush, it might have seemed a good way to reflect the changing nature of the local telephone company environment, to respond to new technologies and to allow LECs higher earnings and faster depreciation.

But eventually, even the most innovative regulatory reforms are bound to be reviewed. It's always possible to look back. These reviews are now becoming more and more frequent. When reality intrudes, most of these analyses reach strikingly similar conclusions: The infrastructure linkage that once formed the foundation of the LECs' visions of regulatory relief is — at best — difficult to discern and — more often — non existent.

This report reviews, and confirms the results of, several recent studies which show that increasing the cash flow available to local monopoly telephone companies generally does not change their investment incentives or increase expenditures on their telephone networks. Analysts with a variety of different perspectives have reached this same conclusion, as have several state reviews of alternative regulation plans. Our conclusion provides both findings and important policy lessons:

---

* Principal of Montgomery Consulting, Chestnut Hill, Massachusetts, 617-327-5606. This paper was supported by MCI Communications Corporation.

- ***Finding.*** Relaxed regulation of LECs does not lead to increased network investment. Earnings sharing and price cap plans reduce regulatory oversight of LEC earnings and cash flow, but do not realize the infrastructure benefits promised by the LECs. A few states like Tennessee and Vermont have *mandated* that LECs spend money on their networks. This approach may lead to actual spending increases but not stimulate demand. And if demand does not rise with infrastructure investment, the consequences of mandated spending plans are as bad (or even worse) than mistargeted "incentive" schemes.

- ***Policy Lesson.*** *A plan designed to stimulate infrastructure spending should have at least these four features, which most infrastructure plans lack:* The regulator ought to have a good idea (1) how the increased cash flow from higher earnings or depreciation rates will be spent; (2) how it compares to the telephone company's "business as usual" capital budgets; (3) what new or improved services and network capabilities it will produce; and (4) whether ratepayer demand will validate the infrastructure additions by using the new capabilities. Without clear targets and ways to measure whether the targets are achieved, neither regulators nor ratepayers really know when they have arrived.

- ***Finding.*** Regulation is only one of many economic factors that affect investment decisions. As telecommunications competition increases, LEC investment strategies will be affected by many factors outside the control of the regulator. Demand for LEC services will become less certain and more elastic than it has been in the past.

- ***Policy Lesson.*** *Because of the influences of emerging competition on LEC investment strategies*, any effort to stimulate network investment by adopting a particular *form* of "alternative" regulation will be even less likely to succeed. The set of regulatory incentives sufficient to overcome all non-regulatory investment consideration would have to be so strong that both efficiency and consumer protection goals would have to be abandoned. A classical Averch-Johnson effect, often postulated to exist under *traditional* rate of return regulation, would have to be explicitly *designed into* the regulatory plan — not eliminated from it.

- ***Finding.*** Regulatory-approved increases in cash flow that are not reinvested in the telephone network when they occur are gone for good. The cash flow is directed to the LECs' other investment opportunities. Past regulatory increases in LECs' cash flow are not self-perpetuating, so an "infrastructure stimulus" vision may continue to be used by telephone companies in the future to gain rate increases and regulatory concessions,

even if that vision has failed in the past to stimulate modernization of the local exchange infrastructure.

- ***Policy Lesson.*** Regulation of dominant telephone companies should adhere to its consumer protection role — to protect users of monopoly services from specific types of monopoly behavior — and not seek to become an engine of economic development. A strong, consumer-oriented incentive plan will provide LECs with the correct balance to achieve monetary rewards through investments that satisfy real market demand for telecommunications services.

The Linkage Between Infrastructure Spending and Regulatory Relief

From the perspective of the local exchange carriers, the linkage between reduced regulation and infrastructure spending is an excellent public policy strategy, even if it has no actual effect on their business plans. The LECs have devoted substantial efforts to focusing public attention on the promised linkage. The linkage between regulatory policies and the telecommunication infrastructure was the primary focus of a major report by the National Telecommunications and Information Administration (NTIA) *Telecommunications in the Age of Information* in 1991.[1] However, almost concurrently with the release of the NTIA Infrastructure Report, a report to state regulators showed that local telephone companies' earnings and finances were as robust as they had ever been.

> Utility companies were both less risky and a substantially more profitable investment vehicle for common shareholders than the average non-regulated corporation over the past 19 years. 75% of electric and telecommunications utility companies earned a higher rate of return than did stockholders of the major non-regulated U.S. industrial corporations...[2]

The NARUC study compared telephone companies with the Standard & Poor's 400 stocks as well as with regulated electric utilities, using three measures of shareholder returns: (1) The internal rate of return earned on new investments, (2) the overall rate of return on capital and (3) a measure of overall investor wealth including appreciation in share prices. The study demonstrated that 94%, 86% and 95% of the local telephone companies

---

[1] US Department of Commerce, National Telecommunications and Information Administration, *Telecommunications in the Age of Information* [NTIA Infrastructure Report], NTIA Special Publication 91-26, October 1991.

[2] National Association of Regulatory Utility Commissioners (NARUC), "Electric and Telephone Utility Stockholder Returns: 1972-1990," August 1991.

outperformed the S&P 400 average under each method, respectively. The telephone company returns under regulation exceeded the returns of *regulated* electric utilities as well by margins of 21% in actual rates of return and over 116% in investor wealth, due mainly to the increases in prices of regional Bell Company shares since the AT&T divestiture. Clearly, regulation had proved to be very beneficial to the fast-growing, declining-cost LECs.

> ***By the late 1980s, the LECs' dilemma was how to utilize regulation to increase their cash flow, without risking earnings or rate decreases. The infrastructure "vision" was the answer.***

Thus, local telephone companies were not likely to be able to increase their cash flow through traditional rate proceedings. LECs wanted to obtain significantly greater pricing flexibility and to do so well before nascent — but extremely isolated — competition began to make inroads into their monopoly services. Using traditional rate proceedings in order to achieve greater flexibility would, however, likely reduce the LECs' potential cash flow: The traditional rate reviews would require rate decreases. In fact, virtually all regulatory reviews of LEC earnings in the last five years, including proceedings that were precursors of regulatory "reform" plans, have resulted in lower revenue requirements for major LECs.

The way out of this dilemma for the LECs was to create a "vision" linking infrastructure spending and state economic development. By shifting the regulatory focus away from protecting *current* ratepayers, and towards promised *future* benefits of increased infrastructure spending, LECs would be able to achieve two goals. They would obtain pricing flexibility and other forms of relaxed regulation, and at the same time reduce or eliminate the potential penalty to their cash flows — gaining higher *de facto* earnings ceilings and higher current depreciation accruals. While one may question whether the resulting paradigm shift is in the public interest, there can be no doubt that the LECs' strategy was both well-conceived and well-executed from their own financial perspective.

When the FCC opened a review of the LECs' authorized rate of return in late 1989, telephone companies were quick to jump on the infrastructure spending bandwagon:

> An upward adjustment to quantitative cost of capital estimates is warranted to incent carriers to commit greater investment to the infrastructure; to improve carriers' ability to attract capital for such investments; and to compensate investors for the inherently more risky and competitive

nature of the investment in the future telecommunications market.[3]

Pacific Telesis is committed to participate in the national effort to upgrade the country's telecommunications infrastructure. This effort, however, increases the need for capital to be applied to accomplish infrastructure improvements and increases in the riskiness of investment in Pacific Telesis and its LECs.[4]

One consultant who was widely used to draw the infrastructure linkage in depreciation represcription and other regulatory proceedings, opined that:

A purely mechanical calculation of capital market rates...is only a starting point in the development of an appropriate rate of return...the FCC's rate of return prescription activities should be carefully guided by the need to incent carriers to invest in a modern public telecommunications network infrastructure and services which will have substantial economic and social benefits.[5]

The FCC relied upon this linkage between allowing LECs higher earnings on their interstate services and the pace of telephone network modernization:

Information submitted by carriers...raise questions about whether modernization of the network is taking place as quickly as we would like. There is no evidence that lack of access to capital is currently a problem; indeed, internally generated funds have exceeded telephone plant construction for the past several years. Nonetheless, our concern about the possibility of a lag in the deployment of advanced technologies counsels that we should...select *a rate of return in the upper part of the range of reasonable estimates*.[6]

In its pending review of the initial price cap plan for large LECs, the FCC has again sought

---

[3] CC Docket 89-624, "Initial Submission of the NYNEX Telephone Companies," February 16, 1990, p. 9 (footnote omitted).

[4] CC Docket No. 89-624, "Initial Submission of Pacific Telesis," February 16, 1990, at pp. 50-51. Pacific's reference to the "national effort" and "the country's" infrastructure may be significant, because data show that the money was not spent in California. Recently the *Wall Street Journal* noted telephone "companies brag about spending huge sums, but their announcements are padded with money they would spend anyway." Keller, "They'll Spend Lots But Lots Less Than They Say," May 18, 1994, p. B-1. The *incremental* spending for Pacific Telesis identified by the article works out to about $18.00 per year per access line.

[5] Statement of W. H. Davidson, NYNEX Initial Submission, *supra*, p. 14.

[6] Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers, *Order*, 5 FCC Rcd 7507, 7530 (1990) (paragraph 203); emphasis added.

comment on whether incentives for investment in telecommunications infrastructure are a good idea.[7] The FCC notes that "[m]any of the local links in this [telecommunications] infrastructure will be provided by the price cap LECs. Revisions to the LEC price cap plan may help this infrastructure achieve its full potential."[8] The FCC questioned "Whether, and if so how, the Commission should revise the price cap plan to support the development of a ubiquitous national information infrastructure."[9]

The NTIA Infrastructure Report focused on this linkage, as we noted. The report concluded that "the soundest way for government to encourage efficient infrastructure development is through removal of unnecessary regulation and promotion of a competitive telecommunications marketplace."[10] NTIA endorsed alternative regulatory plans such as price caps for LECs as well as various state plans in Michigan, Tennessee, California, Vermont, Missouri and elsewhere that called for LECs to be able to retain earnings in excess of the cost of capital in order to fund increased development of the infrastructure. NTIA noted that excess earnings sharing could be "a politically viable means of permitting efficient investment" and to achieve telecommunications policy goals in the area of infrastructure investment.[11] The NTIA report also included an explicit recommendation for state and federal regulators to grant LECs faster depreciation of existing plant in order to stimulate infrastructure development.[12]

As these federal government reports were linking LECs' earnings, depreciation and alternative regulatory plans to the enhancement of the telecommunications infrastructure, numerous state-level studies and "task forces" reinforced the view that the linkage was desirable.[13] Most of these groups enjoyed the financial sponsorship and/or active

---

[7] Price Cap Performance Review for Local Exchange Carriers, *Notice of Proposed Rulemaking*, CC Docket No. 94-1 (FCC 94-10), February 16, 1994.

[8] *Id.*, paragraph 36.

[9] *Id.*

[10] NTIA Infrastructure Report, footnote 2 above, p. xvii.

[11] *Id.*, pp. 252-253.

[12] *Id.*, p. xxii.

[13] Examples of such studies include: "The Report of The Illinois Task Force on Advanced Telecommunications and Networking," April 1992. "Tomorrow's Information Highways: A Telecommunications-Based Development Strategy for New York State," New York State Telephone

participation and support of the major LECs in their states. Few if any of these reports, or the state orders implementing alternative regulation plans, have actually discussed the full set of economic factors that influence investment decisions by any business. Few of the reports recognize an important caution in the NTIA Infrastructure Report:

> [W]hile accelerated depreciation will increase the cash flow available for new network investment, this, by itself, does not guarantee either that the investments will be made or that they will be socially desirable. Firms make investment decisions by considering a variety of factors in addition to the amount of cash on hand, including the need for the investment, its projected cost and the anticipated return in relation to other investment opportunities. If these latter factors do not favor a particular investment it likely will not be made, even if monies are on hand to fund it.[14]

Case Studies: Promises Versus Reality At The State Level

The LECs' have aggressively promoted the infrastructure strategy to regulators, state legislatures and many state level task forces. The basic LEC linkage of infrastructure spending, economic development and regulatory relief was appealing on its face, and many states began to focus on infrastructure spending. Infrastructure spending became an important consideration in telecommunications policies ranging from outright deregulation of tariffs in Nebraska, to mandated spending plans in Tennessee and Vermont, to a variety of incentive regulation plans in other states.

Some of these new plans may have had effective mechanisms built in for monitoring the results of the supposed spending stimuli, but most did not. In retrospect, one can conclude that regulators should (1) have some idea how the increased cash flow from higher earnings or depreciation rates will be spent; (2) be able to compare the revised spending level with historical rates of investment and the telephone company's "business as usual" capital budgets; (3) understand whether the infrastructure upgrades promised by the

---

Association, 1992. "Telecommunications Study Conducted for GTE Telephone Operations," The Roper Organization, April, 1992. Rivkin and Rosner, "Shortcut to the Information Superhighway: A Progressive Plan to Speed the Telecommunications Revolution," Progressive Policy Institute, July 1992. "Can Telecommunications Help Solve America's Health Care Problems?" Arthur D. Little, 1992. "A New Social Compact: Adapting Regulation to Meet Ohio's Need for an Advanced Information Infrastructure," Report of the Blue Ribbon Panel on Ohio's Telecommunications Future, April, 1993. "Convergence, Competition, Cooperation: The Report of the Governor's Blue Ribbon Telecommunications Infrastructure Task Force," Wisconsin, November, 1993.

[14] *Id.*, p. 256 [footnotes omitted], citing comments to NTIA from regulators in California, Indiana and Michigan.

telephone company will result in new or improved services and network capabilities; and (4) determine that telephone customers validate the infrastructure additions by actually buying and using the new capabilities.

All four of these features are needed in order to cement the linkage between LECs' infrastructure promises and *ex post* conditions. But most infrastructure plans have omitted several, or even all, of these monitoring requirements.

This is the framework in which the current study was undertaken. In addition to gathering information available from state regulatory reviews and several empirical studies of infrastructure spending, we performed independent analysis of investment levels, in states where alternative regulation plans have been tied to promised benefits through additions to the telecommunications infrastructure.[15] The different information all points to the conclusion that *no particular form of regulatory relief has produced positive benefits in the form of LEC spending on the telecommunications infrastructure.*

Some of the earliest state infrastructure initiatives *mandated* specific spending levels by LECs. Mandated spending seems to satisfy the first two goals above, because (1) the regulator knows that the added money will be spent on the state's network and (2) can compare the spending plan to historical investment levels. Unfortunately, however, these mandated spending plans fail with respect to the latter two conditions, particularly the need to tie spending to real consumer demand. The result has been that mandated spending plans represent the largest possible departures from the traditional consumer protection role of telephone company regulation. In addition, our comparisons with historical spending levels also show that modernization-related investment is not necessarily increased by the LEC in spite of the supposed mandate; the "mandate" may represent nothing more than the telephone company's business-as-usual plan.

Vermont. Vermont was one of the first states to adopt regulatory reform under its 1989 "social contract" agreement with New England Telephone (NET).[16] The Vermont "social contract" called for rate freezes, but required NET to reinvest $284 million in the Vermont telephone network. In other words, this mandated plan directed that the money be spent on network upgrades rather than being returned to ratepayers in the form of low rates. So far,

[15] The data from our analysis is displayed in the charts in this section of the report and the following section. The methods and data we used are discussed in the next section and in the Study Appendix.

[16] Joint Petition of New England Telephone and the Department of Public Service to Extend the Telecommunications Agreement, *Order*, Docket No. 5252, July 17, 1988.

not only have Vermont ratepayers been the losers, the plan also has reduced the earnings paid to the parent company NYNEX. NET did invest the money but failed to realize revenue gains sufficient to pay for the investment. Over the three years, according to the Vermont regulator's findings "NET experienced a 17 percent growth in investment and a 13.9 percent growth in expenses, while revenues grew only 6.7 percent during the same time period."[17]

Clearly, the gap between expense growth and revenue growth indicated that demand for services provided by the accelerated telecommunications investment had failed to materialize. This observation has the benefit of hindsight, but the Vermont plan, like other state infrastructure initiates, contained little if any hard estimates of demand for expanded telecommunications services when it was developed. Hindsight, then, merely confirms the problematic nature of mandating spending without the *foresight* assuring that real demand will develop.

NET's failure to realize new revenues in proportion to the increased spending meant that its returns on average net investment declined persistently in 1989, 1990, and 1991 to 8.2%, 7.0% and 6.8%, respectively.[18] The telephone company's returns remain suppressed in that state today. Not surprisingly, the telephone company has now retreated from its investment promises. More recently the Vermont PSC noted that "the company's plans are to invest primarily to support growth in customer demand and to meet other basic needs." In contrast to the $90 to $100 million yearly investment outlays under the initial mandated spending plan, NET reduced its capital spending for 1993 to only $47 million. Most of this budget, $37.9 million, is confined to normal network maintenance and upgrades required to serve existing customers and demand.[19]

Large potential rate *reductions* also were foregone by the Vermont spending plan. One study calculated that if Vermont had experienced the same level of investment per line as NYNEX spent in the remainder of its region, the telephone company's Vermont rate base would have been $80 million lower and customer rates could have been set 15% to 20%

---

[17] *Id.*, *Order*, Docket No. 5526, December 4, 1991, Finding number 23.

[18] *Id.*, at page 20.

[19] Joint Petition of New England Telephone and the Department of Public Service to Extend the Vermont Telecommunications Agreement, *Order*, Docket No. 5614, January 29, 1993. pp. 20 and 32.

lower.[20]

Tennessee. A mandated spending plan in Tennessee has allowed the Bell company to invest or retain funds that could have been used for real rate relief. In 1990, the Tennessee PSC adopted an accelerated infrastructure plan under a Master Plan called "FYI Tennessee."[21] Infrastructure spending was explicitly tied to significant excess earnings that South Central Bell was realizing; the plan called for spending over $111 million, about 70% of a telephone company's excess return on investment. The Master Plan characterized the spending plan as:

> relatively aggressive deployment of the technology required to provide the specified service capabilities. Generally speaking, full deployment of CCS7 in the urban areas in 1991 and in the rest of the State by 1993 is recommended. The plan also calls for initial introduction of ISDN in urban areas in 1992, followed quickly in the other counties, leading to full deployment throughout the State by the end of the study period.[22]

Tennessee regulators adopted the study and placed particular emphasis on the deployment of integrated service digital network (ISDN) capabilities. ISDN requires digital central office switches. The infrastructure plan emphasized that the Bell company's non-digital switches should be replaced on an accelerated schedule in order to provide ISDN to all customers. Like the Vermont plan, this mandated spending program did ensure that telephone company cash flow would be re-invested in the state's network. Also like Vermont, however, the Tennessee investment program did not come with a guarantee of success: Often, the "Field of Dreams" scenario does not work — you can build it and they *still won't* come.[23] In 1992, a Tennessee court required the PSC to revisit the plan, noting

---

[20] "Policy Analysis of the Second Vermont Telecommunications Agreement," Economics and Technology, Inc. for the Vermont Public Contract Advocate, Docket No. 5540, January 1992, p. 5.

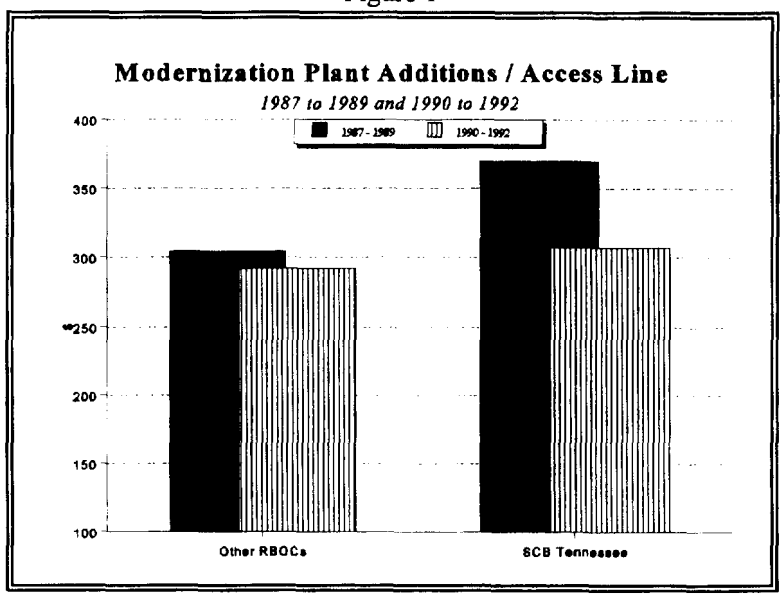
[21] Earnings Investigation of South Central Bell Telephone Company 1990-92, Tennessee Public Service Commission Docket No. 90-05953, *Orders* September 28, 1990 and January 17, 1991; *remanded* Tennessee Cable Television Association, *et al.* v. Tennessee Public Service Commission, Appeal 01-A-01-9012BC-00437, July 2, 1992.

[22] "Telecommunications Technology Deployment Analysis and Master Plan Development," RCG Hagler, Bailly Doherty, Hogan Division, July 1990, Volume 1, p. V-22.

[23] The Tennessee Technology Deployment "Master Plan" itself cautioned that the information needed to accurately estimate costs "proved to be difficult to define, often inconsistent and frequently incomplete" and noted that the "market development cycle for enhanced PSN [public switched network] applications is long and complex," and that "cost and capability data [relating to the modernization] should be carefully reviewed." *Id.*, pp. V-29 and V-35.

that "The manner in which the Commission has gone about formulating its technology modernization raises legitimate concerns. The companies that served to benefit most from the regulatory changes played a significant role in formulating them."[24]

Figure 1



The Tennessee PSC decided to maintain the spending plan. But the plan failed to consider what the company would have spent on its network if its excess earnings had been refunded to ratepayers instead of being devoted to FYI Tennessee. As our own analysis in Figure 1 shows, modernization-related investment levels per access line by the Bell company in Tennessee were exceeding the national average before the investment plan was adopted but have since declined as the telephone company experienced higher access line growth. The primary impact of the plan seems to be that it denied rate refunds to customers for past excess earnings. Interestingly, at the end of 1992, South Central Bell still had about $32.6 million in its excess earnings account to be spent on new investment.[25] This amount would have been enough to give all of Bell's monopoly customers in the state a rate reduction of about $15 each.[26]

The plan seems to fail even the most basic cost/benefit test. Even as recently as March of this year, Bell reported that customers were using *only 710 lines* of ISDN services, out of more than *2.2 million lines* it serves in the state. The real cost of ISDN service thus amounted to about $50,000 for each customer who paid for the service. The Tennessee Commission recently refused to grant Bell's customers in non-ISDN exchanges free remote

---

[24] *TCTA v. Tennessee PSC*, footnote 17, above at p. 22.

[25] Earnings Investigation of South Central Bell Telephone Company 1993 95, Tennessee Public Service Commission Docket No. 92-13527, *Order*, September 22, 1993, p. 3.

[26] Two effects of the Tennessee plan have been a legislative investigation of the regulatory agency and the creation of a new consumer advocate office outside the control of the regulatory commission.

access to ISDN switches, because of its new-found concern that the expenditure would not be cost effective. In other words, *customers* have failed to validate the economic benefits of the mandated spending plan for ISDN, so the Tennessee plan fails the last of the four conditions.

Ultimately, the Tennessee plan completely overlooked traditional economic principles. For a plan such as Tennessee's to be possible the LEC must (a) have excess earnings and (b) face a mandate to re-invest the money. These conditions are compatible neither with protecting consumers nor trying to increase telephone company efficiency. Economic efficiency is sacrificed any time telephone company incentives and behavior depart from the expected norms of a competitive marketplace, and both conditions (a) and (b) are outside such norms. The goals of the plan will not be achieved unless new services are provided as a result of these investments, *and consumers buy these services*.

The "FYI Tennessee" program was cited as a model of pro-active infrastructure investment stimulus in testimony submitted by Bell witnesses in the neighboring state of Louisiana. The Louisiana PSC ordered an audit to determine if investment incentives were deficient in that state compared to Tennessee. During the audit, however, the Network Vice President for the parent company BellSouth Telecommunications offered his opinion that the real difference in Tennessee was, "More public relations. I am being very honest with you...the technology that is being deployed is identical. The engineering techniques that are being used is *[sic]* identical."[27]

Nebraska. Nebraska is the only jurisdiction in the United States that has essentially deregulated telephone rates. Nebraska has almost totally deregulated the local telephone companies. The deregulation statute, Legislative Bill 835, has been subject to several analyses. A study by the University of Nebraska developed an econometric model of the factors that influence telephone investment, in order to isolate the effects of the state's unique deregulation statute on investment, prices and other items. The review found some investment stimulus from deregulation, noting "Investment has declined less slowly *[sic]* in Nebraska than in other states...The difference between Nebraska and other states is quite modest, however."[28]

---

[27] "Report of the Special Counsel Regarding Ratemaking and Financial Audit and Incentive Regulation Plan," Louisiana Public Service Commission, September 15, 1992, pp. 27-34.

[28] "Telecommunications Rate Deregulation in Nebraska: A Five Year Review," International Center for Telecommunications Management, University of Nebraska at Omaha, January 1992, at page 6-11. The actual text states that Nebraska investment "declined less slowly" (to wit, "faster"). However, the text was

A review by the Nebraska PSC staff found that several of the conclusions reached by the University study of LB 835 could not, in fact, be attributed to the deregulation law.[29] The staff report said that factors stimulating infrastructure investment include depreciation rates which the PSC continues to regulate. The staff also noted the PSC's enforcement activity "to test and inspect the facilities of telecommunications common carriers" could affect investment decisions, citing a US West central office conversion that was accelerated through discussions between the telephone company and the Commission.

Our independent analysis of data indicated at first blush relatively higher plant additions in Nebraska, consistent with the results of the University of Nebraska study. However, careful inspection of US West's telephone plant investment in that state revealed unexplainable anomalies. In particular, investment in General Purpose Computers (Account 2124) allocated to Nebraska increased by over 78% between 1988 and 1992. By 1992, the State of Nebraska bore over 21% of US West's investment in Account 2124, despite having only 4.6% of US West's access lines. The investment per access line allocated to Nebraska in the General Purpose Computer account was $403.54, compared to the US West average of $103.28. The additional $300 of gross investment is about 15% of US West's gross plant investment per access line in 1991-92 ($1,975), and without this unusual allocation *in a single plant account*, US West's gross investment per access line in Nebraska ($1,674) would actually be *below* the average for all RBOCs ($1,715).

It is far from clear that this allocation of general purpose computers to Nebraska benefited either the state's telecommunications infrastructure or telephone ratepayers. We could not determine whether the investment allocation is reasonable, or whether the telephone company is exploiting the state's guidelines for deregulated price increases. Accordingly, Nebraska data was excluded from our final study.

California. The price cap plan adopted by the California PUC for Pacific Bell and General Telephone has been subject to significant debate. A renewal of the plan was tied up in wrangling over whether the existing price cap limits should be tightened — in favor of ratepayers — or maintained at a level generating more cash flow for network investment.

The network investment promise also characterized the debate over the initial price cap

---

apparently meant to read either "declined less" or "declined *more* slowly," because the study data show that Nebraska investment did decline but less than in the other states compared in the study.

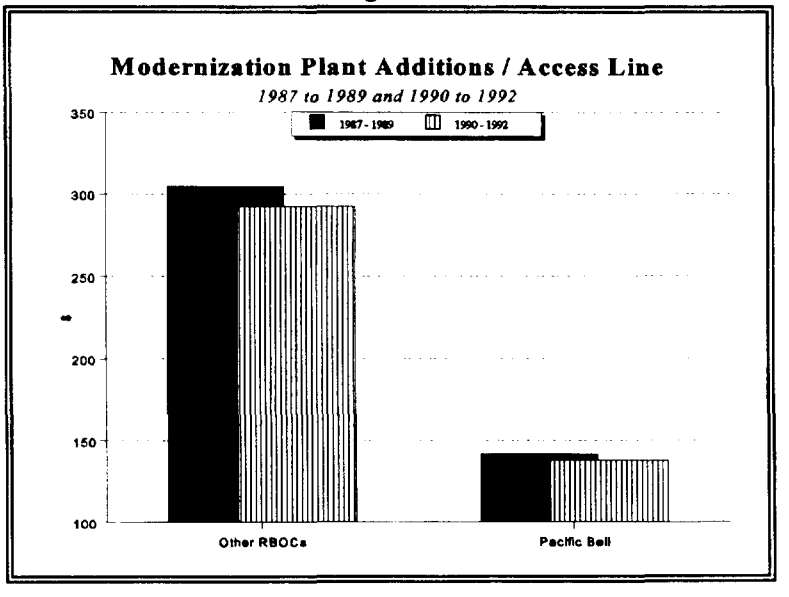
[29] Nebraska PSC staff review of the 1992 evaluation (undated), pp. 12-14.

plan in 1989. The California Commission relied then upon the expected benefits of network modernization in approving that state's price cap plan for major LECs:

> Pacific argues that an overall framework of incentive regulation would provide local exchange carriers with additional incentives to invest in a modernized infrastructure...Pacific further submits that endorsement of its proposed infrastructure improvements is essential if all Californians are to realize the benefits of what it calls the "Information Age."
>
> [GTEC] stresses that those aspects of its plan which allow GTEC to flexibly price services which use advanced technologies and allow shareholders to retain a portion of the financial rewards resulting from efficiency gains would create incentives needed to develop and deploy an integrated network..."[30]

The PUC adopted an order that found "that Pacific's proposal to invest $404 million through 1992 to upgrade its network is an important and necessary step."[31] However, as Figure 2 shows from our own data analysis, Pacific Bell's modernization plant additions have not increased in California.[32]

Figure 2



Whatever the investment trend has been for Pacific Bell in California, the incentive regulation plan fostered another type of shift in cash flows over time. Examining the effects of the price cap regulatory regime on the telephone network

[30] Alternative Regulatory Frameworks for Local Exchange Carriers, California Public Utilities Commission, Decision 89-10-031, October 12, 1989, 33 CPUC 2nd 43, 99.

[31] *Id.*, at 150.

[32] Figure 2 also shows that Pacific Bell's modernization-related gross plant additions were relatively lower in both time periods. Part of this effect is because California generally is a high growth state. Our methodology assigns relatively more of the total gross plant additions in California to this growth component. Nevertheless, in California the *unadjusted* rate of gross plant additions per access line has also remained well below national averages, despite the 1989 determinations of the PUC.

infrastructure, a California official noted that the timing of implementing incentive regulation "can set up opportunities for substantial inadvertent transfers from ratepayers to shareholders....The research and development from these technologies was paid for by ratepayers, but under the new regulatory framework, shareholders have reaped the windfall."[33] Explaining that,

> In the years immediately preceding NRF, the telecommunications utilities invested several billion dollars in new digital switches that replaced their central office equipment. The investments were put into the utilities' rate bases and paid for by ratepayers. The advantage of this technology was that the utility would require fewer employees to operate their system, and this is what allowed Pacific Bell to lay off so many employees. Under NRF, the ratepayers only benefit from these efficiency gains once the utility exceeds a 13% return and the sharing mechanism kicks in.

Now, despite the weight given to Pacific's infrastructure claims when the incentive plan was adopted, the California PUC is apparently down playing the issue. The Commission recently issued its Final Opinion in the incentive regulation review proceeding.[34] The latest decision makes no findings of fact or conclusions of law about the infrastructure and does not address future infrastructure spending levels at all, a result that may not be surprising given the California data.[35]

Michigan. Michigan is another state that linked relaxed earnings regulation of a Bell company with infrastructure upgrades.[36] The PSC directed Bell to apply $14.5 million in excess earnings for hearing-impaired relay services plus additional $4 million for permanent lifeline service. The PSC contemplated enhanced funding for Bell's construction program through 1991, with additional programs thereafter. The appeal of this infrastructure linkage was an important factor in the Michigan Legislature's enactment the following year of Public Act 179. Michigan Bell officials explicitly promised growth in network investment and modernization. But when the LEC's 1992 construction program for $500 million per year was announced, the *Detroit Free Press* reported:

---

[33] Neal Shulman, Executive Director of the California Public Utilities Commission, speaking to the National Conference of Regulatory Attorneys in Columbus, Ohio, May 1992, at page 4 of the prepared remarks.

[34] Applications of GTE California and Pacific Bell for review of the regulatory framework adopted in Decision 89-10-031, Applications No. 92-05-002 and 92-05-004, Decision 94-06-11, June 8, 1994.

[35] *See* footnote 3 above.

[36] Application of Michigan Bell Telephone Company for Authority to Implement a Trial Plan for Modified Regulation, Michigan PSC Case No U-8987, *Opinion and Order* March 13, 1990.